



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0465; Project Identifier AD-2022-00330-R; Amendment 39-22288; AD 2022-27-03]

RIN 2120-AA64

Airworthiness Directives; Leonardo S.p.a. Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is superseding Airworthiness Directive (AD) 2021-20-10 for certain Leonardo S.p.a. Model AB139 and AW139 helicopters. AD 2021-20-10 required removing from service a certain part-numbered main gearbox (MGB) spherical bearing lock nut (lock nut) that is installed on certain part-numbered MGBs and replacing it with a newly designed MGB lock nut. AD 2021-20-10 also prohibited installing any MGB with the affected MGB lock nut and prohibited installing any affected MGB lock nut on any helicopter. Since the FAA issued AD 2021-20-10, it was discovered that a part number (P/N) was incorrectly listed and that the applicability needed to be clarified. This AD retains the requirements of AD 2021-20-10 and clarifies the applicability. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of November 22, 2021 (86 FR 57574, October 18, 2021).

ADDRESSES: For service information identified in this final rule, contact Leonardo S.p.a. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G. Agusta 520, 21017 C. Costa di Samarate (Va) Italy; telephone +39-0331-225074; fax +39-0331-229046; or at customerportal.leonardocompany.com/en-US/. You may view this service

information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. Service information that is incorporated by reference is also available at regulations.gov by searching for and locating Docket No. FAA-2022-0465.

Examining the AD Docket

You may examine the AD docket at regulations.gov by searching for and locating Docket No. FAA-2022-0465; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Kristi Bradley, Program Manager, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email kristin.bradley@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2021-20-10, Amendment 39-21748 (86 FR 57574, October 18, 2021) (AD 2021-20-10). AD 2021-20-10 applied to Leonardo S.p.a. Model AB139 and AW139 helicopters, without MGB lock nut P/N 3G6320A09152 installed and with MGB P/N 3G6320A00131, 3G6320A00132, 3G6320A00133, 3G6320A00134, 3G6320A00135, 3G6320A00136, 3G6320A22031, 4G6320A00132, or 4G6320A00133 installed; or MGB P/N 3G320A00133 with serial number (S/N) M23 installed, or MGB P/N 3G6320A00134, with S/N M6, N76, N92, P124, P129, P131, P162, P184, Q230, Q243, Q249, R272, V21, V39, V96, V163, V211, V241, V272, V281, V384, V386, or

V622 installed; or MGB P/N 3G6320A00136 with S/N AW1, AW2, AW3, AW5, or AW10 installed.

AD 2021-20-10 required, within 100 hours time-in-service (TIS), or during the next scheduled MGB overhaul, whichever occurs first after the effective date of the AD, removing a certain part-numbered MGB lock nut from service and replacing it with a different part-numbered MGB lock nut. AD 2021-20-10 also prohibited installing an MGB having an affected MGB lock nut on any helicopter and also prohibited installing an affected MGB lock nut on any helicopter as of the effective date of the AD.

AD 2021-20-10 was prompted by a series of EASA ADs beginning with EASA AD 2019-0036, dated February 15, 2019 (EASA AD 2019-0036), issued by EASA, which is the Technical Agent for the Member States of the European Union, to correct an unsafe condition for all serial-numbered Leonardo S.p.a. Helicopters (formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A.; and AgustaWestland Philadelphia Corporation, formerly Agusta Aerospace Corporation) Model AB139 and AW139 helicopters. EASA advised that an occurrence was reported of a cracked MGB lock nut P/N 3G6310A09151, which is used to keep the planetary gears in position. EASA AD 2019-0036 required replacing each MGB lock nut with an airworthy MGB lock nut. EASA advised this condition, if not detected and corrected, could lead to failure of the MGB planetary gears, resulting in loss of control of the helicopter.

After EASA issued EASA AD 2019-0036, an additional occurrence was reported of a cracked MGB lock nut P/N 3G6320A09151. Accordingly, EASA superseded EASA AD 2019-0036 with EASA AD 2019-0174, dated July 18, 2019 (EASA AD 2019-0174), which retained the requirements of EASA AD 2019-0036 but reduced the compliance times. After EASA issued EASA AD 2019-0174, Leonardo Helicopters issued Alert Service Bulletin No. 139-609, dated December 18, 2019, to provide instructions for replacing the affected MGB lock nut with MGB lock nut P/N 3G6320A09152, which has a redesigned flange reducing the stress at the bearing nut locations where cracks were detected.

Accordingly, EASA then issued EASA AD 2020-0011, dated January 29, 2020, and corrected January 30, 2020 (EASA AD 2020-0011), which superseded EASA AD

2019-0174, and partially retained the requirements of EASA AD 2019-0174. EASA AD 2020-0011 revised the compliance times in EASA AD 2019-0174, required replacing each affected MGB lock nut with a newly designed MGB lock nut, and prohibited installing an affected MGB on any helicopter. After EASA issued EASA AD 2020-0011, EASA identified certain MGB part numbers that were inadvertently categorized incorrectly and therefore listed in the wrong group of helicopters. Accordingly, EASA issued EASA AD 2020-0011R1, dated November 20, 2020 (EASA AD 2020-011R1), thereby revising EASA AD 2020-0011. EASA AD 2020-0011R1 retained the requirements of EASA AD 2020-0011 and corrected Appendix 1 of EASA AD 2020-0011.

After EASA issued EASA AD 2020-0011R1, Leonardo Helicopters issued Alert Service Bulletin No. 139-609, Revision A, dated April 13, 2021, which identifies an additional part-numbered MGB, which is also affected by the unsafe condition. Accordingly, EASA superseded EASA AD 2020-0011R1 with EASA AD 2021-0121, dated May 4, 2021 (EASA AD 2021-0121). EASA AD 2021-0121 adds an additional part-numbered MGB with a certain S/N to the list of affected parts. EASA AD 2021-0121 retains the requirements of EASA AD 2020-0011R1, and corrects Table 1 and Appendix 1 of EASA AD 2020-0011R1.

Accordingly, EASA AD 2021-0121 requires replacing each affected MGB lock nut with a newly designed MGB lock nut, and prohibits installing an affected MGB on any helicopter.

The NPRM published in the *Federal Register* on April 20, 2022 (87 FR 23477). The NPRM was prompted by the discovery that MGB P/N 3G6320A00133 was incorrectly listed as MGB P/N 3G320A00133 in both the preamble and applicability paragraph of AD 2021-20-10. Also, the FAA determined that all MGBs, regardless of S/N, are affected by the unsafe condition. Therefore, the NPRM proposed to remove any reference to S/Ns in the applicability. In addition, the NPRM included the total U.S. fleet costs, which were inadvertently excluded in AD 2021-20-10. In the NPRM, the FAA also proposed to retain all of the requirements of AD 2021-20-10.

Discussion of Final Airworthiness Directive

Comments

The FAA received comments from three commenters. The commenters were Leonardo Helicopters, Bristow Group, and Chevron Aviation. All commenters requested a change to the compliance time and two made a statement concerning who can perform the service task. The following presents the comments received on the NPRM and the FAA's response to each comment.

Requests to Change the Compliance Time to Upgrade the MGB Lock Nuts

All commenters referred to an FAA-approved global Alternative Method of Compliance (AMOC) to AD 2021-20-10 and two commenters requested that the FAA change the proposed AD's compliance time to align with the global AMOC. The other commenter specifically requested that the compliance time approved in the global AMOC of 28,000 landings or during the next scheduled MGB overhaul be incorporated into the compliance time of the proposed AD.

The FAA agrees; however, instead of revising the Required Actions paragraph, the FAA has revised the AMOC paragraph by allowing the AMOC previously approved for AD 2021-20-10 as an approved AMOC for the corresponding requirements in paragraph (g) of this AD.

Required Actions

Two commenters noted that replacing the lock nut can only be performed by Leonardo at the overhaul level, but requested no change to the required actions of the proposed AD; the FAA, therefore, made no changes in this regard.

Conclusion

The FAA reviewed the relevant data, considered any comments received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, including correcting a part number in paragraph (g)(2) of the required actions, and any other changes described previously, this AD is adopted as proposed in the NPRM. None of the changes will increase the economic burden on any operator.

Related Service Information under 1 CFR part 51

The FAA reviewed Leonardo Helicopters Alert Service Bulletin No. 139-609, Revision A, dated April 13, 2021, which the Director of the Federal Register approved for incorporation by reference as of November 22, 2021 (86 FR 57574, October 18, 2021).

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA also reviewed Leonardo Helicopters Alert Service Bulletin No. 139-567, Revision B, dated October 18, 2019, which provides additional information for replacing the MGB lock nut.

Differences Between This AD and EASA AD 2021-0121

EASA AD 2021-0121 requires a compliance time based on number of landings, whereas this AD requires a compliance time based on hours TIS. The service information referenced in EASA AD 2021-0121 requires submitting certain information and parts to Leonardo, whereas this AD does not. EASA AD 2021-0121 applies to all serial-numbered Model AB139 and AW139 helicopters, whereas this AD applies to all Model AB139 and AW139 helicopters, regardless of S/N, with a certain part-numbered MGB lock nut and MGB installed.

Costs of Compliance

The FAA estimates that this AD affects 130 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Replacing each affected MGB lock nut with a newly designed MGB lock nut takes about 190 work-hours (during next MGB overhaul) and parts cost about \$7,600 for an estimated cost of \$23,750 per helicopter and \$3,087,500 for the U.S. fleet.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator.

Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA has determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by:

a. Removing Airworthiness Directive 2021-20-10, Amendment 39-21748 (86 FR 57574, October 18, 2021); and

b. Adding the following new airworthiness directive:

2022-27-03 Leonardo S.p.a.: Amendment 39-22288; Docket No. FAA-2022-0465; Project Identifier AD-2022-00330-R.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2021-20-10, Amendment 39-21748 (86 FR 57574, October 18, 2021) (AD 2021-20-10).

(c) Applicability

This AD applies to Leonardo S.p.a. Model AB139 and AW139 helicopters, certificated in any category, with a main rotor gearbox (MGB) part number (P/N) 3G6320A00131, 3G6320A00132, 3G6320A00133, 3G6320A00134, 3G6320A00135, 3G6320A00136, 3G6320A22031, 4G6320A00132, or 4G6320A00133, and MGB spherical bearing lock nut (lock nut) P/N 3G6320A09151 installed.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 6320, Main Rotor Gearbox.

(e) Unsafe Condition

This AD was prompted by a cracked MGB lock nut. The FAA is issuing this AD to replace an affected MGB lock nut with a new MGB lock nut. The unsafe condition, if not addressed, could result in failure of the MGB planetary gears, resulting in loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within 100 hours time-in-service, or during the next scheduled MGB overhaul, whichever occurs first after November 22, 2021 (the effective date of AD

2021-20-10), remove each MGB lock nut P/N 3G6320A09151 from service and replace with MGB lock nut P/N 3G6320A09152 in accordance with Annex A, steps 1 through 17, of Leonardo Helicopters Alert Service Bulletin No. 139-609, Revision A, dated April 13, 2021, except you are not required to send parts to Leonardo Helicopters.

Note 1 to paragraph (g)(1): Leonardo Helicopters service information refers to an MGB lock nut as a ring nut.

(2) As of November 22, 2021 (the effective date of AD 2021-20-10), do not install any MGB having MGB lock nut P/N 3G6320A09151 on any helicopter, and do not install any MGB lock nut P/N 3G6320A09151 on any helicopter.

(h) Special Flight Permits

Special flight permits are prohibited.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (j)(2) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) AMOCs approved previously for AD 2021-20-10 are approved as AMOCs for the corresponding requirements in paragraph (g) of this AD.

(j) Related Information

(1) Refer to EASA AD 2021-0121, dated May 4, 2021, for related information. This EASA AD may be found in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2022-0465.

(2) For more information about this AD, contact Kristi Bradley, Program Manager, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222-5110; email kristin.bradley@faa.gov.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(3) The following service information was approved for IBR on November 22, 2021 (86 FR 57574, October 18, 2021).

(i) Leonardo Helicopters Alert Service Bulletin No. 139-609, Revision A, dated April 13, 2021.

(ii) [Reserved]

(4) For service information identified in this AD, contact Leonardo S.p.a. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G. Agusta 520, 21017 C. Costa di Samarate (Va) Italy; telephone +39-0331-225074; fax +39-0331-229046; or at customerportal.leonardocompany.com/en-US/.

(5) You may view this service information at FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110.

(6) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: fr.inspection@nara.gov, or go to: www.archives.gov/federal-register/cfr/ibr-locations.html.

Issued on December 20, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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